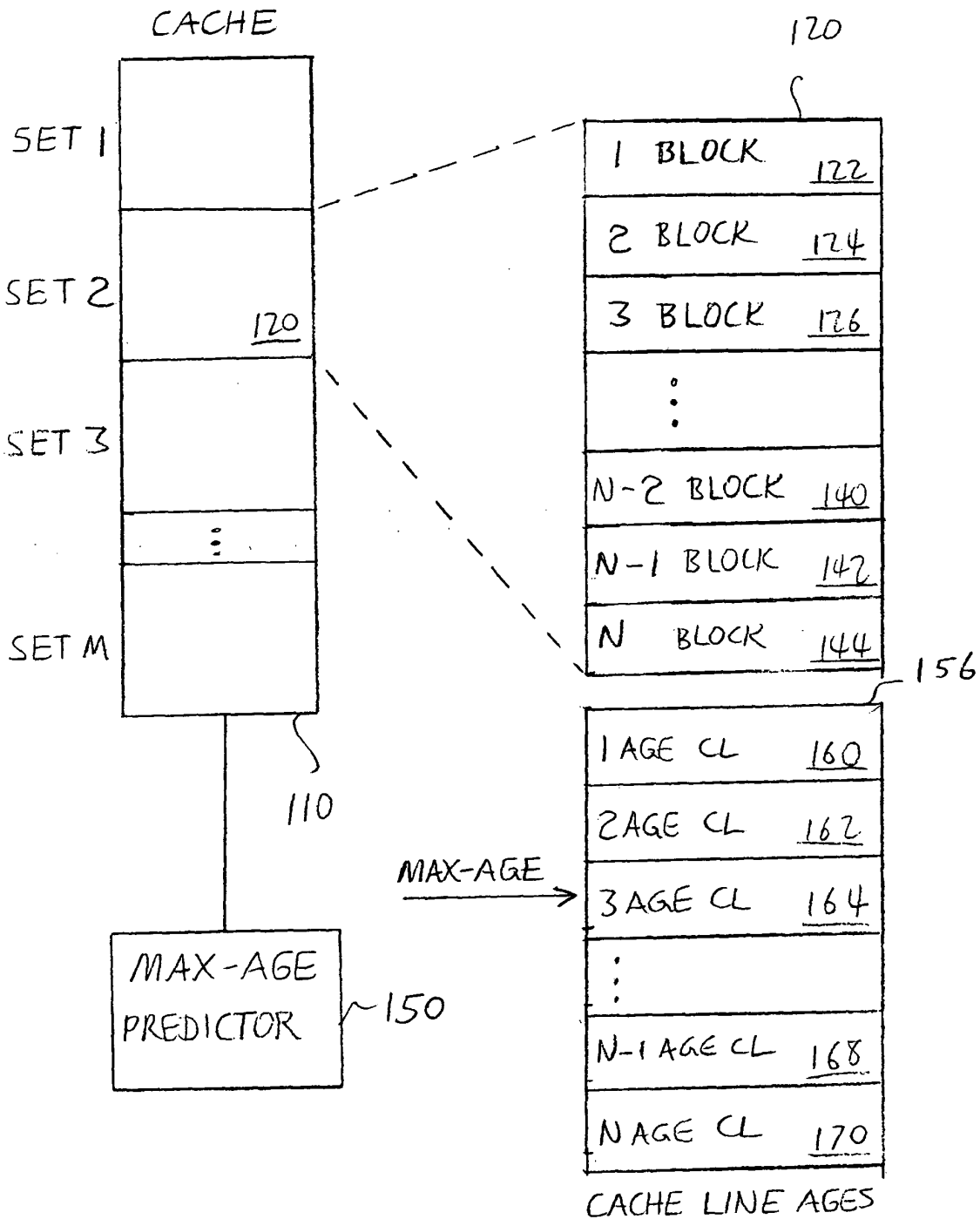
CACHE
SET 1
SET 2
120
SET 3
SET M
110
MAX-AGE PREDICTOR
150
MAX-AGE
120
1 BLOCK 122
2 BLOCK 124
3 BLOCK 126
N-2 BLOCK 140
N-1 BLOCK 142
N BLOCK 144
156
1 AGE CL 160
2 AGE CL 162
3 AGE CL 164
N-1 AGE CL 168
N AGE CL 170
CACHE LINE AGES

FIGURE 1

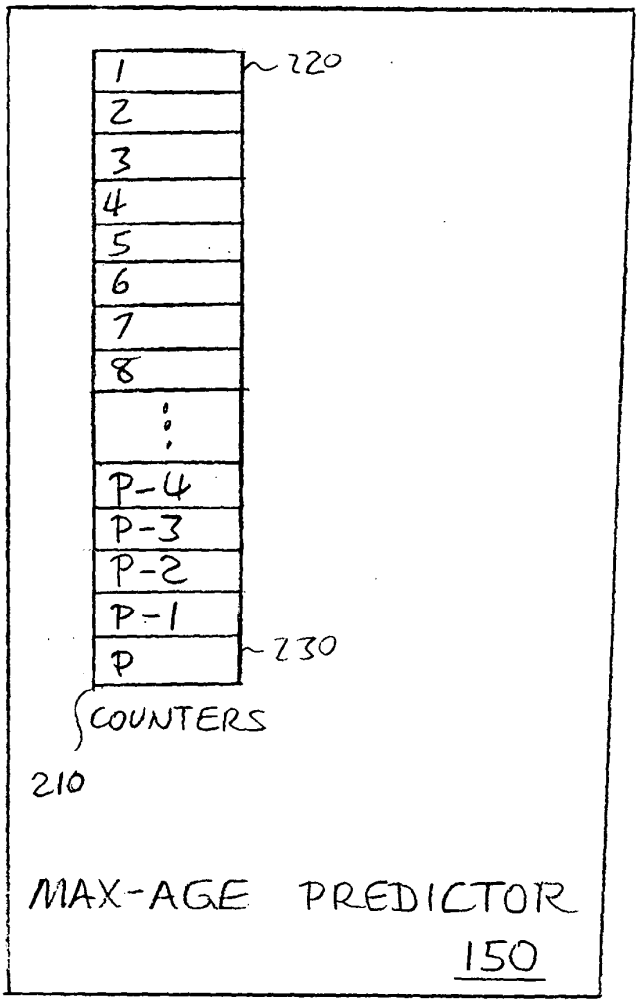
1
2
3
4
5
6
7
8
P-4
P-3
P-2
P-1
P
220
230
COUNTERS
210
MAX-AGE PREDICTOR
150

FIGURE 2

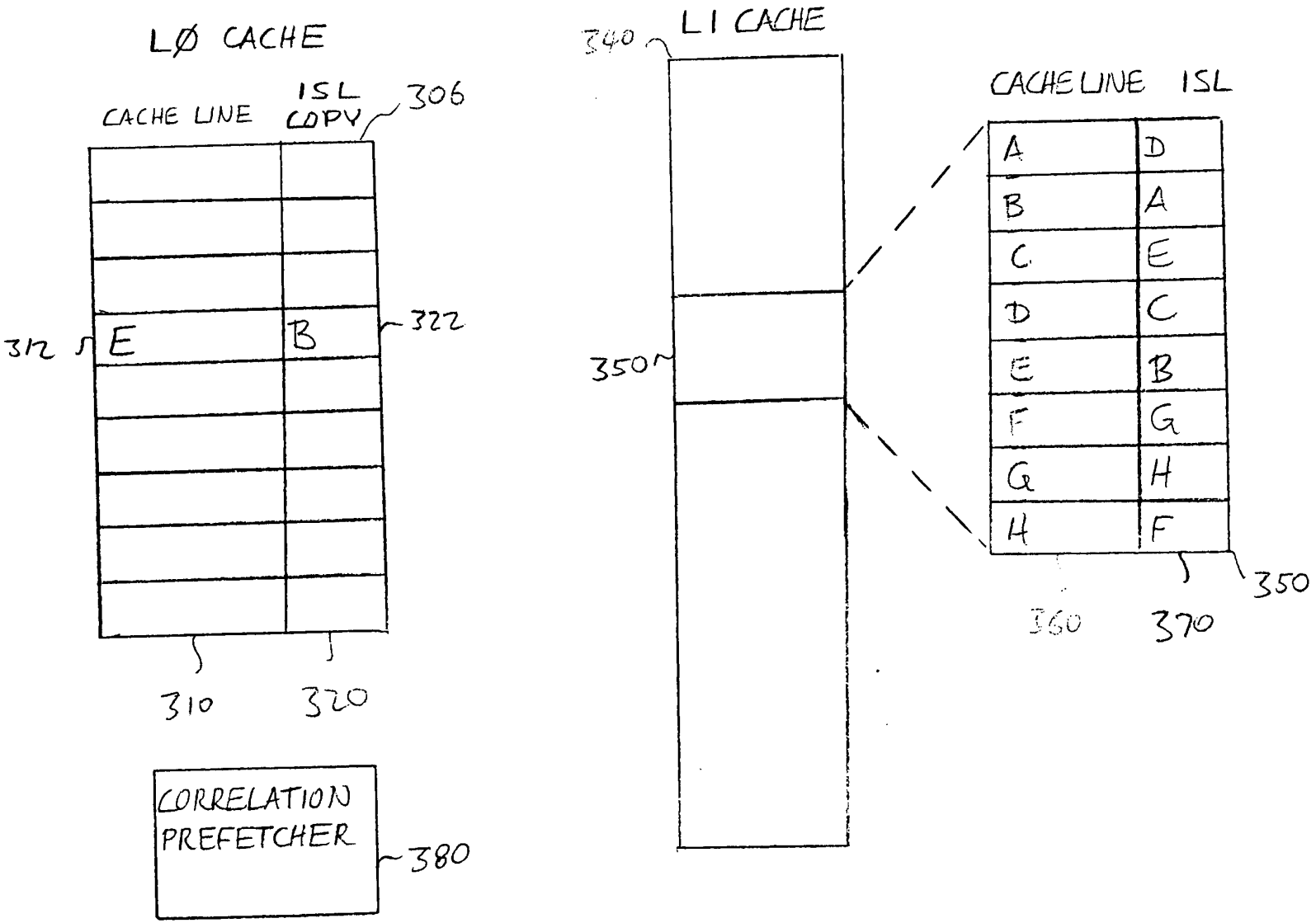
LØ CACHE
CACHE LINE
ISL COPY
306
312
E
B
322
310
320
CORRELATION PREFETCHER
380
340
L1 CACHE
350
CACHE LINE
ISL
A
D
B
A
C
E
D
C
E
B
F
G
G
H
H
F
350
360
370

FIGURE 3

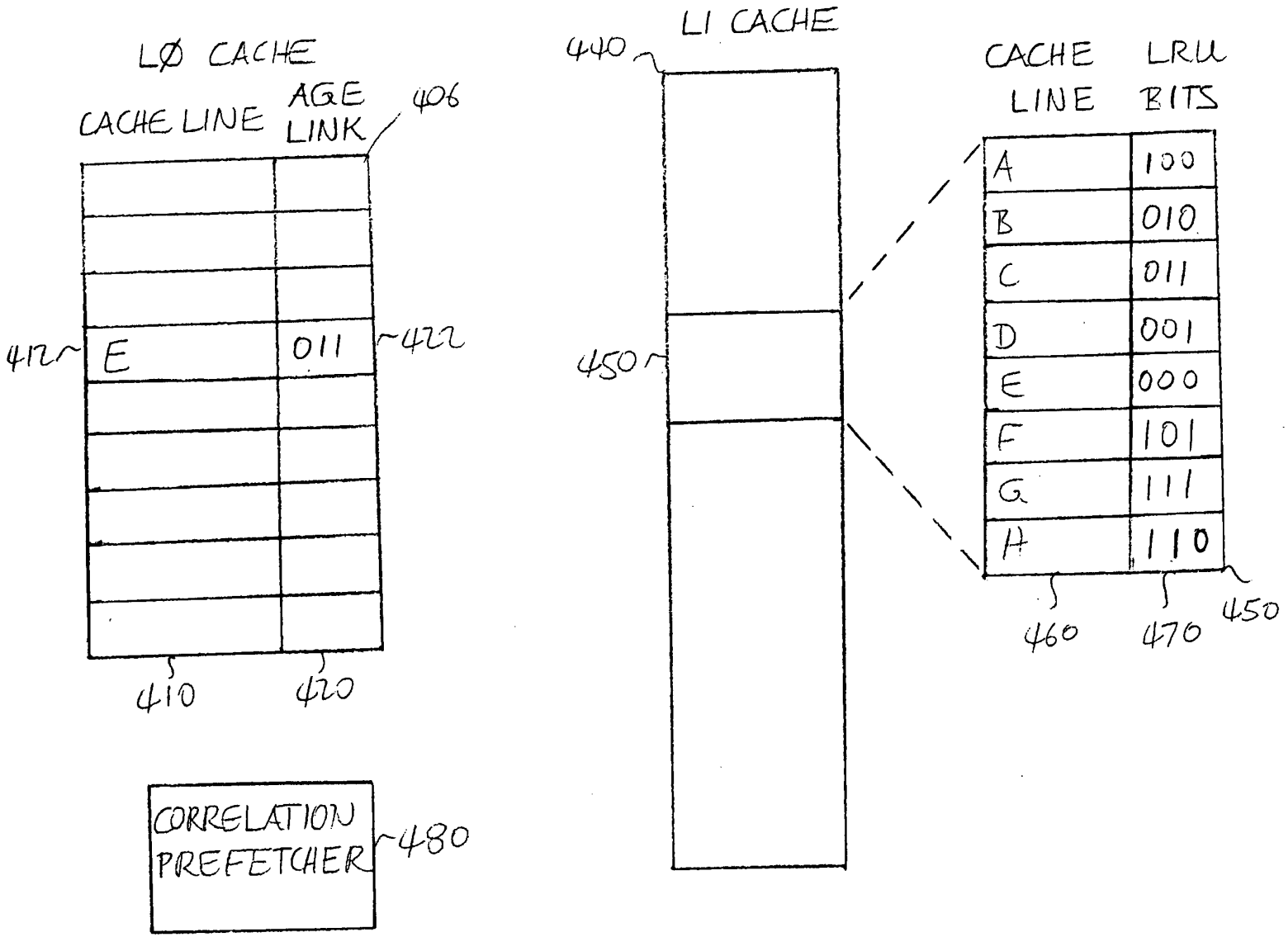
L0 CACHE
CACHE LINE
AGE LINK
406
412
E
011
422
410
420
CORRELATION PREFETCHER
480
L1 CACHE
440
450
CACHE LINE
LRU BITS
A
100
B
010
C
011
D
001
E
000
F
101
G
111
H
110
460
470
450

FIGURE 4

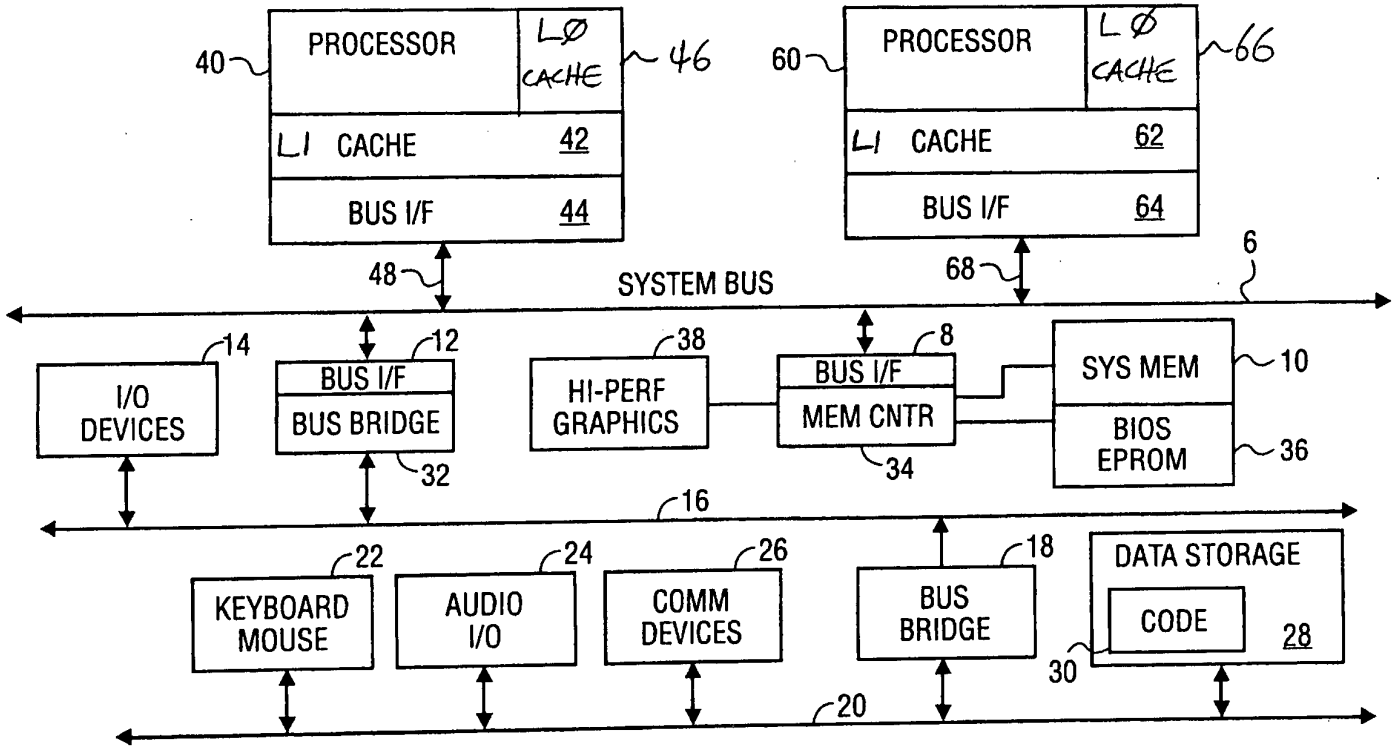
40
PROCESSOR
L0 CACHE
46
L1 CACHE
42
BUS I/F
44
60
PROCESSOR
L0 CACHE
66
L1 CACHE
62
BUS I/F
64
48
68
SYSTEM BUS
6
14
I/O DEVICES
12
BUS I/F
BUS BRIDGE
32
38
HI-PERF GRAPHICS
8
BUS I/F
MEM CNTR
34
SYS MEM
10
BIOS EPROM
36
16
22
KEYBOARD MOUSE
24
AUDIO I/O
26
COMM DEVICES
18
BUS BRIDGE
DATA STORAGE
CODE
28
30
20

FIG. 5